



DATE:  
April 2006

PROJECT NUMBER:  
129684

**BROWN AND  
CALDWELL**  
Carson City, Nevada

Atlantic Richfield  
Company

**Figure 2-14**

**Well B/W-10D Construction Details**

Project Name: Yerington Groundwater InvestigationWell Number: B/W-10Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 1 of 13

Boring Location: <b>North of Sunset Hills residential area</b>		Elevation: <b>4341.6 feet amsl</b>	East: <b>324460.1</b> North: <b>1569181.6</b>
Drilling Contractor: <b>WDC</b>	Driller: <b>B. Zamow</b>	Date Started: <b>7/26/05</b>	Date Finished: <b>8/5/05</b>
Drilling Equipment: <b>Gus Pech GP24-400RS, Diedrich Sonic Head</b>		Total Depth: (feet) <b>165.0</b>	Water Depth: (feet) <b>22' / 19.49'</b>
Sampling Method: <b>Core Barrel</b>	Borehole Diameter: <b>6"</b>	Well Diameter and Material: <b>2-inch PVC</b>	
Drilling Method: <b>Sonic, utilized 6" casing and a 4.5" core barrel</b>		Screened Interval and Well Depth: <b>100.6-120.6 ft., bottom at 120.8 ft.</b>	
Well Seal: <b>Bentontite and Cement</b>		Slot Size: <b>0.020"</b>	Filter Material: <b>#10-20 Silica Sand</b>
Logged By: <b>C. Gardner</b>		Development Method: <b>Swabbed, bailed, pumped</b>	

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
		CL	<b>LEAN CLAY</b> (0-14 feet) Dry, hard, no odor. Primarily silt and clay with ~10% medium to fine sand and trace coarse sand to ~3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and have a strong reaction to HCl.					<p>Descriptions of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System. Munsell colors described wet.</p> <p>Horizontal survey data is expressed in the Nevada State Plane system, Nevada West zone, in feet.</p> <p>Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line.</p> <p>All depths are below land surface unless stated otherwise.</p> <p>WELL DESIGN for B/W-10D: Screened Interval: 100.6-120.6 feet. Bottom of sump: 120.8 feet.</p> <p>Cement Grout: 0-92 feet. Bentonite Chips: 92-96 feet. Filter Pack: #60 Sand 96-96.5 feet, #10-20 Sand 96.5-122.5 feet. Bentonite Chips: 122.5-165 feet</p> <p>Depth to Water Measuring Point is Top of PVC Casing.</p> <p>Top of PVC Elevation: 4,344.08 feet, amsl. PVC Stick-up: 2.5 feet above land surface.</p>

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
4330								
15		CL	<b>SANDY LEAN CLAY</b> (14-15.5 feet) Dry, hard, no odor. Primarily silt and clay with ~50% medium to fine sand and trace coarse sand to 4 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
4325		SW	<b>WELL-GRADED SAND with GRAVEL</b> (15.5-17 feet) Moist to dry, loose, no odor. Primarily coarse to medium sand with ~20% fine gravel to ~15 mm and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SM	<b>SILTY SAND with GRAVEL</b> (17-18 feet) Moist, medium dense, no odor. Primarily coarse to medium sand with ~40% gravel and ~25% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SM	<b>SILTY SAND</b> (18-19.5 feet) Moist to dry, medium dense, no odor. Primarily medium to fine sand with ~15% coarse sand, ~5% fine gravel to ~8 mm, and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
20		CL	<b>GRAVELLY LEAN CLAY with SAND</b> (19.5-20.5 feet) Moist, hard, no odor. Primarily silt and clay with ~20% sand and ~30% gravel to ~25 mm. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
		SM	<b>SILTY SAND with GRAVEL</b> (20.5-21 feet) Dry, medium dense, no odor.					
4320		SW	Primarily medium to fine sand with ~20% gravel and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl. <b>WELL-GRADED SAND</b> (21-24.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~25 mm and ~5% silt and clay. The sand is subangular to subrounded, the gravel is subrounded to rounded. The fines are nonplastic, are brown, and do not react to HCl.					

Project Name: Yerington Groundwater InvestigationWell Number: B/W-10Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 3 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
25		SW	<b>WELL-GRADED SAND</b> (24.5-25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~1.5 mm with trace silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW	<b>WELL-GRADED SAND with GRAVEL</b> (25-26 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~20% fine sand, ~35% gravel to ~30 mm, and trace silt and clay. The sand is subangular to subrounded, the gravel is subangular to rounded. The fines are nonplastic, are brown, and do not react to HCl.					
4315		SW	<b>WELL-GRADED SAND with GRAVEL</b> (26-27.5 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~35% gravel to ~30 mm and ~5% silt and clay. The sand is subangular to subrounded, the gravel is subangular to rounded. The fines are nonplastic, are light brown, and do not react to HCl.					
		SW	<b>WELL-GRADED SAND</b> (27.5-29.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% coarse sand to ~4 mm with trace silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are light brown, and do not react to HCl.					
30		GW-GM	<b>WELL-GRADED GRAVEL with SILT and SAND</b> (29.5-30 feet) Saturated, medium dense, no odor. Primarily gravel to ~20 mm with ~20% medium to fine sand, ~15% coarse sand, and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular to rounded. The fines are nonplastic, are brown, and do not react to HCl.					
		ML	<b>SILT</b> (30-32 feet) Moist, soft, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have low to medium plasticity and low toughness, are olive brown (2.5Y 4/3), and do not react to HCl. Some black organic streaks.					
4310		CL	<b>LEAN CLAY</b> (32-32.5 feet) Dry to moist, stiff, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
		ML	<b>SILT</b> (32.5-33.5 feet) Moist, soft, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have low to medium plasticity and low toughness, are olive brown (2.5Y 4/3), and do not react to HCl. Some black organic streaks.					
		CL	<b>LEAN CLAY</b> (33.5-35.5 feet) Dry to moist, stiff, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl. Some black organic streaks.					
35		CL	<b>LEAN CLAY</b> (35.5-37.5 feet) Moist, very soft, no odor.					

B/W-10 @ 26 - 31 Ft.

Project Name: **Yerington Groundwater Investigation**Well Number: **B/W-10**Soil Boring ☐Monitoring Well ☒

Project Number:

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
	4305		Primarily silt and clay with ~20% medium to fine sand and trace coarse sand to ~3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl. Some black organic streaks.					
		CL	<b>SANDY LEAN CLAY</b> (37.5-38.5 feet) Moist, stiff, no odor. Primarily silt and clay with ~30% medium to fine sand and trace fine gravel to ~15 mm. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
40		SW-SM	<b>WELL-GRADED SAND with GRAVEL</b> (38.5-40.5 feet) Saturated, loose, no odor. Primarily medium to fine sand with ~20% coarse sand, ~25% gravel to ~25 mm, and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular to rounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	<b>SANDY LEAN CLAY</b> (40.5-41.5 feet) Moist, hard, no odor. Primarily silt and clay with ~35% medium to fine sand and trace coarse sand to ~4.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
	4300	SM	<b>SILTY SAND with GRAVEL</b> (41.5-44.5 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~15% fine sand, ~15% gravel to 20 mm, and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
45		SM	<b>SILTY SAND with GRAVEL</b> (44.5-48.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% coarse sand, ~15% fine gravel to ~15 mm, and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4295							
		SM	<b>SILTY SAND</b> (48.5-49 feet) Saturated, medium dense, no odor.					
		SW	Primarily medium to fine sand with ~10% fine gravel to ~15 mm and ~20% silt and clay. The sand and gravel are					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
50	4290		subangular to subrounded. The fines are nonplastic, and are brown. <b>WELL-GRADED SAND</b> (49-55 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~25 mm with ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are light brown, and do not react to HCl.					
55	4285	SW-SM	<b>WELL-GRADED SAND with SILT</b> (55-58 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% fine gravel to ~15 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl. From 55-56.5 feet the interval has elongated gravel, from 56.5-58 the interval has no gravel.					
		SW	<b>WELL-GRADED SAND with GRAVEL</b> (58-59 feet) Saturated, medium dense no odor. Primarily medium to fine sand with ~20% coarse sand, ~15% fine gravel to ~15 mm, and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are light brown, and do not react to HCl.					
		GW-GM	<b>WELL-GRADED GRAVEL with SILT and SAND</b> (59-60 feet) Saturated, medium dense, no odor. Primarily gravel to ~25 mm with ~15% medium to fine sand, ~15% coarse sand, and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular to rounded. The fines are nonplastic, are brown, and do not react to HCl.					
60	4280	SM SW-SM	<b>SILTY SAND</b> (60-60.25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% coarse sand, ~5% gravel to 20 mm, and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subrounded to rounded. The fines are nonplastic, are reddish brown, and do not react to HCl. Red oxidized staining. <b>WELL-GRADED SAND with GRAVEL</b> (60.25-63.5 feet) Saturated, medium dense, no odor.					

B/W-10 @ 50 - 55 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			Primarily medium to fine sand with ~15% gravel to ~25 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular to rounded. The fines are nonplastic, are brown, and do not react to HCl. No gravel in the interval from 61.5-63.5					
		SW	<b>WELL-GRADED SAND</b> (63.5-64.5 feet) Saturated, loose, no odor. Primarily medium to fine sand with ~5% gravel to ~25 mm with trace silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl. Some reddish brown iron oxide streaks at ~63 feet.					
65		SW	<b>WELL-GRADED SAND</b> (49-55 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~10% gravel to ~20 mm with trace silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4275							
		GW	<b>WELL-GRADED GRAVEL with SAND</b> (67-69.5 feet) Saturated, medium dense, no odor. Primarily gravel to ~20 mm with ~15% coarse to medium sand and trace silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
70		CL	<b>LEAN CLAY with SAND</b> (69.5-72 feet) Moist to saturated, loose, no odor. Primarily silt and clay with ~20% fine sand (<0.5 mm). The sand is subrounded. The fines have low to medium plasticity and low toughness, are dark yellowish brown (10YR 4/4), and do not react to HCl. Interval has some reddish brown iron oxide streaks.					
	4270							
		SP-SM	<b>POORLY-GRADED SAND with SILT</b> (72-73.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand (<0.5 mm) with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are reddish brown, and do not react to HCl.					
		CL	<b>LEAN CLAY with SAND</b> (73.5-74.5 feet) Moist to saturated, soft to stiff, no odor. Primarily silt and clay with ~20% fine sand (<0.5 mm). The sand is subrounded. The fines have low to medium plasticity and low toughness, are olive brown (2.5Y 4/3), and do not react to HCl.					
75		SW-SM	<b>WELL-GRADED SAND with SILT</b> (74.5-79 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~2 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are					

B/W-10 @ 64 - 69 Ft.

Project Name: Yerington Groundwater InvestigationWell Number: B/W-10Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 7 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
	4265		nonplastic, are brown, and do not react to HCl.					
80	4260	SW	<b>WELL-GRADED SAND with GRAVEL</b> (79-84 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% gravel to ~30 mm and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
85	4255	SW-SM	<b>WELL-GRADED SAND with SILT</b> (84-87.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~10 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SM	<b>SILTY SAND</b> (87.5-89.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~25% coarse sand, trace fine gravel to ~10 mm, and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are					

B/W-10 @ 83.5 - 88.5 Ft.



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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			nonplastic, are brown, and do not react to HCl.					
90		CL	<b>LEAN CLAY with SAND</b> (89.5-92 feet) Moist, hard, no odor. Primarily silt and clay with ~20% fine sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl. Some black organic streaks.					
	4250							
		CL	<b>LEAN CLAY with SAND</b> (94.5-95 feet) Moist, stiff to hard, no odor. Primarily silt and clay with ~20% medium to fine sand to ~1.5 mm. The sand is subangular to subrounded. The fines low to medium plasticity and low toughness in the upper and lower portions of the interval, medium plasticity and toughness in the middle portion of the interval, are brown (10YR 5/3), and do not react to HCl. Some black organic streaks.					
95								
	4245							
		SW	<b>WELL-GRADED SAND</b> (97-101 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~10 mm with ~5% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, are brown, and do not react to HCl.					
100								
		SW	<b>WELL-GRADED SAND</b> (101-102.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~20 mm					

Project Name: Yerington Groundwater InvestigationWell Number: B/W-10Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 9 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			with ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular. The fines are nonplastic, are brown, and do not react to HCl.					
		SW	<b>WELL-GRADED SAND</b> (102.5-107 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~10% gravel to ~25 mm with ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.	B/W-10 @ 100 - 105 Ft.				
105								
	4235							
		CL	<b>LEAN CLAY</b> (107-107.5 feet) Moist, stiff, no odor.					
		SW-SM	Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4/2), and do not react to HCl. <b>WELL-GRADED SAND with SILT</b> (107.5-115 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~6 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl. Increased grain size (includes ~15% angular to subrounded gravel to ~25 mm) between ~114 and 115 feet.					
110								
	4230							

Project Name: **Yerington Groundwater Investigation**Well Number: **B/W-10**Soil Boring ☐Monitoring Well ☒

Project Number:

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
115		GW-GM	<b>WELL-GRADED GRAVEL with SILT and SAND</b> (115-116.5 feet) Saturated, medium dense, no odor. Primarily gravel to 40 mm with ~15% sand and ~10% silt and clay. The sand is subangular to subrounded, the gravel is angular to rounded. The fines are nonplastic, are brown, and do not react to HCl.					
4225		SW	<b>WELL-GRADED SAND</b> (116.5-122.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
120		SW	<b>WELL-GRADED SAND with GRAVEL</b> (119.5-121.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% gravel to ~30 mm and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
4220		SW	<b>WELL-GRADED SAND</b> (121.5-122.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~6 mm and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW	<b>WELL-GRADED SAND with GRAVEL</b> (122.5-124 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% coarse sand, ~20% gravel to ~30 mm, and ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
125		SW	<b>WELL-GRADED SAND</b> (124-124.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~10 mm and ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
4215		SW-SM	<b>WELL-GRADED SAND with SILT</b> (124.5-127.75 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~20% fine sand, trace fine gravel to ~9 mm, and ~10% silt and clay. The sand is subangular to subrounded, the gravel is angular to subrounded. The fines are nonplastic, are light brown, and do not react to HCl.					

B/W-10 @ 120 - 125 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
130	4210	ML	<b>SANDY SILT</b> (127.75-128.5 feet) Moist, firm, no odor. Primarily silt and clay with ~30% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
		CL	<b>SANDY LEAN CLAY</b> (128.5-129.5 feet) Moist, stiff, no odor. Primarily silt and clay with ~30% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
		ML	<b>SANDY SILT</b> (129.5-130.5 feet) Moist, firm, no odor. Primarily silt and clay with ~30% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
		CL	<b>LEAN CLAY</b> (130.5-132 feet) Moist, hard, no odor. Primarily silt and clay with ~10% sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are light olive brown (2.5Y 5/3), and have a strong reaction to HCl.					
		SM	<b>SILTY SAND with GRAVEL</b> (132-133 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~20% gravel to ~20 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
		CL	<b>LEAN CLAY</b> (130.5-132 feet) Moist, hard, no odor. Primarily silt and clay with ~10% sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are light olive brown (2.5Y 5/3), and have a strong reaction to HCl.					
		SM	<b>SILTY SAND with GRAVEL</b> (132-133 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~20% gravel to ~20 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
		SC	<b>CLAYEY SAND</b> (134.5-135 feet) Moist to saturated, dense, no odor. Primarily medium to fine sand with ~5% fine gravel to ~12 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness and are brown.					
		CL	<b>LEAN CLAY with SAND</b> (135-136 feet) Moist, hard, no odor. Primarily silt and clay with ~20% medium to fine sand to ~1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and do not react to HCl.					
		SM	<b>SILTY SAND</b> (136-136.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~8 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
135	4205	CL	<b>SILTY SAND</b> (136.5-137 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% fine gravel to ~10 mm and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SW	<b>WELL-GRADED SAND</b> (137-145 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~15% fine sand, ~5% gravel to ~30 mm, and ~5% silt and clay. The sand and					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
4200			gravel are subrounded. The fines are nonplastic, are brown, and do not react to HCl. The interval from 145-147.5 feet has ~15% gravel to 50 mm. The gravel is subrounded.	B/W-10 @ 140 - 145 Ft.				
145		SW	<b>WELL-GRADED SAND</b> (145-147.5 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~15% fine sand, ~15% gravel to ~50 mm, and ~5% silt and clay. The sand and gravel are subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
4195		GW-GM	<b>WELL-GRADED GRAVEL with SILT</b> (147.5-149.5 feet) Saturated, dense, no odor. Primarily gravel to ~30 mm with ~10% coarse to medium sand and ~10% silt and clay. The sand is angular to subrounded, the gravel is subangular to subrounded. The fines are nonplastic, are dark brown, and do not react to HCl.					
150		CL	<b>LEAN CLAY</b> (149.5-151 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3 to 10YR 5/3), and do not react to HCl.					
4190		SM	<b>SILTY SAND</b> (152-153.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~4.5 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SM	<b>SILTY SAND</b> (153.5-154 feet)					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
155		CL	Saturated, dense, no odor. Primarily medium to fine sand with trace fine gravel to ~8 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
		SM						
		GW-GM	<b>SANDY LEAN CLAY</b> (154-154.5 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~20% coarse to medium sand and ~10% fine gravel to ~15 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.					
		GW-GM	<b>SILTY SAND with GRAVEL</b> (154.5-155 feet) Saturated to moist, medium dense, no odor. Primarily coarse to medium sand with ~20% fine gravel to ~15 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, are yellowish brown, and have a strong reaction to HCl.					
	4185		<b>WELL-GRADED GRAVEL with SILT and SAND</b> (155-155.5 feet) Saturated, medium dense, no odor. Primarily gravel to ~75 mm with ~20% coarse to medium sand and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are olive brown, and have a strong reaction to HCl.					
			<b>WELL-GRADED GRAVEL with SILT and SAND</b> (155.5-160 feet) Saturated, medium dense, no odor. Primarily gravel to ~55 mm with ~25% coarse to medium sand and ~10% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
160		CL	<b>SANDY LEAN CLAY</b> (160-161.75 feet) Moist, stiff, no odor. Primarily silt and clay with ~30% sand and trace fine gravel to ~15 mm. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, are light yellowish brown (2.5Y 6/3), and have a strong reaction to HCl.					
	4180							
		CL	<b>SANDY LEAN CLAY</b> (154-154.5 feet) Moist to dry from 161.75-162 feet, dry from 162-165 feet, very hard, no odor. Primarily silt and clay with ~35% coarse to medium sand and ~10% gravel to 20 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, are yellowish brown (7.5YR 5/2), and have a strong reaction to HCl.					
165								